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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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21005	7590	01/20/2006	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C.			KIM, RICHARD H	
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CONCORD, MA 01742-9133			2871	

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/843,534

Applicant(s)

ROBERTS ET AL.

Examiner

Richard H. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 67-114 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 67-114 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 67, 69-70, 72-76, 79-82, 84-87, 89-90, 92-96, 99-102 and 104-114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. (US 5,659,376) in view of Yamada (US 5,508,834)

Referring to claims 67, 84-87 and 104-114, Uehara et al. discloses a liquid crystal display apparatus and in the description of the prior art (Fig. 2) discloses a housing (125) with an aperture (opening in the front that can be seen just under the sheet 111), a plurality of housing elements (112, 105, 100B etc), a liquid crystal panel (101) having an image plan (due to the nature of the liquid crystal display), and opposed transparent substrates defining first and second sides of the display panel (101a, 101b), at least one substrate being mounted to and within the housing so as to position the display panel in optical alignment with the aperture (101b, 150a, 154, 152). Uehara also discloses a polarizer (119) disposed relative to the second side (101b) of the display and is mechanically secured and spaced by the housing (125) from the image plane by a distance. Although Uehara teaches that the polarizers (118, 119) are spaced mechanically a distance from the image plane, Uehara does not teach that such a placement of the polarizers will minimize the visibility of the defects to a viewer.

Yamada also discloses a liquid crystal display device having polarizers having a liquid crystal panel (5), a liquid crystal display having an image plane, a first side and a second side (Fig. 7), a first polarizer (8) disposed relative to the first side of the display and is mechanically spaced by the housing (transparent cover plate 6) by a distance such that the first polarizer (8) defects (foreign matter, dust, or fluff, col. 4, line 18) area out of depth of focus of the lens system (col. 4, lines 1-24). Since a viewer's eye has a lens, the out of depth of focus as taught by Yamada will minimize the visibility of the defects to the viewer.

Yamada also discloses a second polarizer (9) disposed relative to the second side of the display and is mechanically spaced by the housing (transparent cover plate, 7) by a distance such that the second polarizer (9) defects (foreign matter, dust or fluff, col. 4, line 18) are out of depth of focus of the lens system (col. 4, lines 1-24). Since a viewer's eye has a Lens, the out of depth of focus as taught by Yamada will minimize the visibility of the defects to the viewer.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the spacing of the polarizer from the image plane of the display as taught by Yamada to the display of Uehara to provide a panel structure in which an image quality would not be adversely affected even if foreign matter such as dust or fluff is attached to the polarizing plates (col. 2, lines 13-17).

As to claims 69-70 and 89-90: Both Uehara and Yamada disclose a second polarizer disposed that is mechanically spaced by the housing by a distance such that the second polarizer defects (foreign matter, dust or fluff, col. 4, line 18 of Yamada) are out of depth of focus of the lens system (col. 4, lines 1- 24 of Yamada).

As to claims 72-76 and 92-96: Both Uehara and Yamada disclose the mechanical spacing of the first and second polarizers from the image plane with the housing, mounting with receptacles (125 of Uehara) (Fig. 2), plurality of housing elements including color filters (Fig. 8 of Yamada) and in a backlight (Fig. 2, 104 of Uehara) to provide the illumination light.

As to claims 79-82 and 99-102: Both Uehara and Yamada disclose the display that has a first surface and a second surface, first polarizer and the second polarizer located at a first and second distances from the respective surfaces. Yamada also discloses a lens and the first polarizer substantially parallel to the display. In Fig. 6, Yamada discloses a variation where the first polarizer is located between the display and the transparent cover that includes the lens as shown in Fig. 7 of Yamada.

As to claims 107-114: Uehara teaches that a first polarizer (118) is attached to a protective plate (111) and that the protective plate with the polarizer (acts like a unified polarizer) is mechanically spaced by the housing from the image plane. Since the protective plate with the polarizer rests on the housing (125), it does not require any adhesives.

3. Claims 68, 71, 88 and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara and Yamada in view of Mizuno et al. (US 2002/0098344) and Hopper et al. (US 4,388,375).

Both Uehara and Yamada disclose a display system with a first polarizer and a second polarizer having defects and an arrangement where these polarizers are placed at a distance and Yamada teaches that these defects are out of the depth of focus of a lens system.

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However, neither Uehara nor Yamada disclose the size of the defects. Mizuno in disclosing an optical adhesive film formed of a polyester film teaches that foreign substance particles (defects) for these films have a maximum size of 20 micrometers or more (paragraph 001 1), which meets the limitation of greater than 10 micrometers recited in the instant claims. (Hopper's reference is used for the teaching that polarizers are made from polyester films). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the defect size having greater than 10 micrometers as disclosed by Mizuno in view of Hopper to the polarizers of Uehara and Yamada to provide films that are superior in transparency, adhesiveness, thermal shrinkage and optical defects (paragraph 0018 of Mizuno).

4. Claims 77 and 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara in view of Yamada and further in view of Sawa (JP 06263760).

Uehara discloses one diffuser (106). However, Uehara does not disclose two diffusers. Sawa in disclosing a back light unit (23) discloses two diffusers 11 and 34. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the two diffuser configuration as disclosed by Sawa to the display of Uehara and Yamada to provide a backlight unit capable of performing back illumination more uniformly (see purpose).

5. Claims 78, 98, 83 and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara, Yamada and Sawa in view of Mori (US 6,288,700).

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As to claims 78, 98, 83 and 103: Yamada does not disclose that the backlight consists of an LED or the size of the display. Mori in disclosing a light emitting flat panel device used as a backlight for mono-color or multi-color image displays, discloses LED sources (4R, 4G, 4B) and also discloses that displays of any size from small to large can be realized (col. 2, line 5). Hence the display size having a diagonal of less than one inch as recited in claims 83 and 103 would have been obvious.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the LED sources as disclosed by Mori to the display of Yamada to obtain very thin and high brightness devices with low power consumption and having varying sizes and low manufacturing costs and ease of manufacturing (col. 2, lines 1-7).

Response to Arguments

6. Applicant's arguments filed 11/19/05 have been fully considered but they are not persuasive.

7. In response to Applicant's argument that since the Uehara reference discloses an LCD apparatus having a liquid crystal panel 101 which is mounted to an intermediate fixing plate, Uehara fails to disclose the claimed limitation of "at least one substrate is mounted to and within the housing so as to position the display panel in optical alignment with the aperture", Examiner submits that even though an intermediate fixing plate 112 is disposed between the substrate and the housing, the transparent substrate 101a is still mounted to the housing. "Mount" is defined as "To fix securely to a support". Even though the fixing plate 112 is not part of the housing, the fixing plate actually assists the substrate to being mounted the housing. Typically, during

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mounting, an intermediate piece, such as a screw or adhesive, is disposed between the device being mounted and whatever it is being mounted to. However, simply because an intermediate piece is disposed there between to assist in the mounting, does not negate the fact the two devices are indeed mounted to each other. In Applicant's response, the assertion is made that Examiner has mistakenly considered the fixing plate 112 as being part of the housing. However, Examiner has NOT made that assertion. In fact, Examiner has only stated that the substrate is mounted to and within the housing. The substrate is still mounted to the housing even though an intermediate part is disposed between the substrate and the housing.

8. Applicant argues that Examiner has incorrectly stated in the Office Action that "since the protective plate with the polarizer rests on the housing, it does not require an adhesive". In support Applicant argues that Uehara discloses such an alternate orientation that states, "a large panel is generally used in an upright position in a desk top work processor..." However, such an orientation is not required for the liquid crystal panel to be operational.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H. Kim whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard H Kim
Examiner
Art Unit 2871

RHK


ANDREW SCHECHTER
PRIMARY EXAMINER